

Eleven things you should know about the carpool lanes in Los Angeles County.

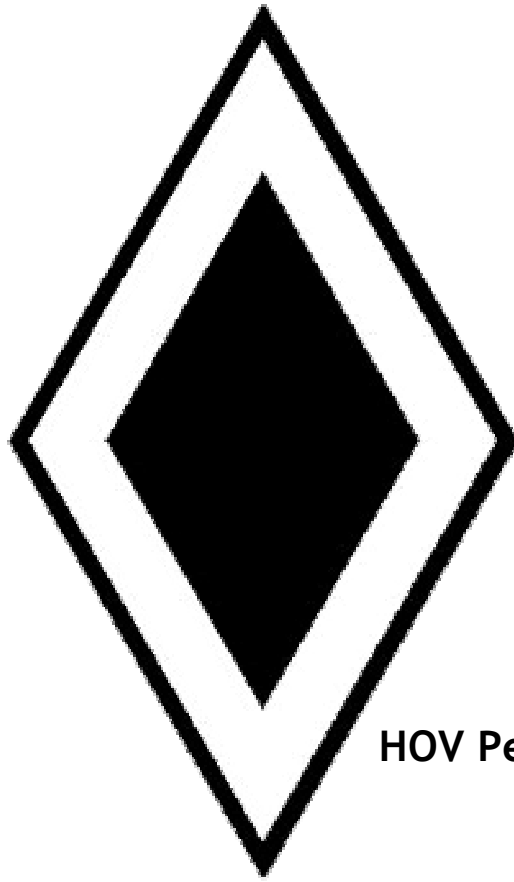


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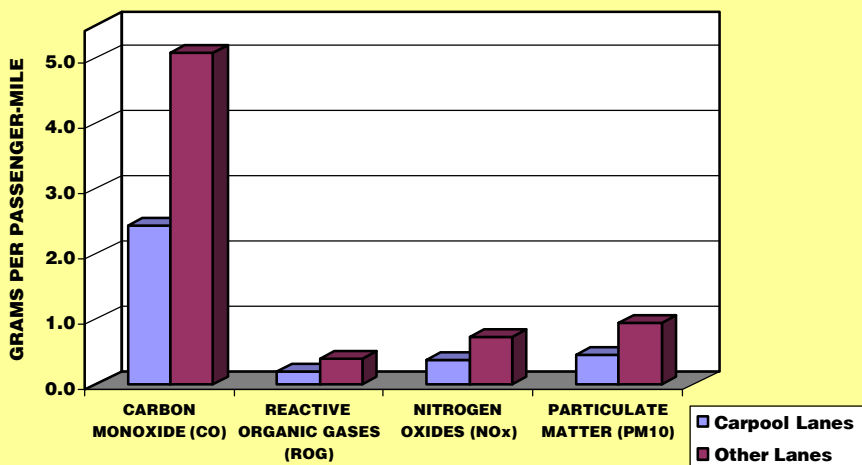
HOV Performance Program
Executive Summary
July 2002

10) Carpool lanes can help air quality.

Carpool lanes generate about **half** the emissions per person-mile than the other adjacent lanes on a freeway. Furthermore, survey findings for Los Angeles County reflect a widely held belief among residents and commuters that carpool lanes do help the region's air quality.

Air quality is important to residents of Southern California, and carpool lanes are only one of a number of measures enacted to help slow the growth of vehicle emissions. Carpool lanes encourage ridesharing and transit use, thereby cutting down on the number of vehicles that would otherwise use the region's roadway system.

VEHICLE EMISSIONS
(AVERAGE OF AM & PM PEAK HOUR - ALL STUDY ROUTES)



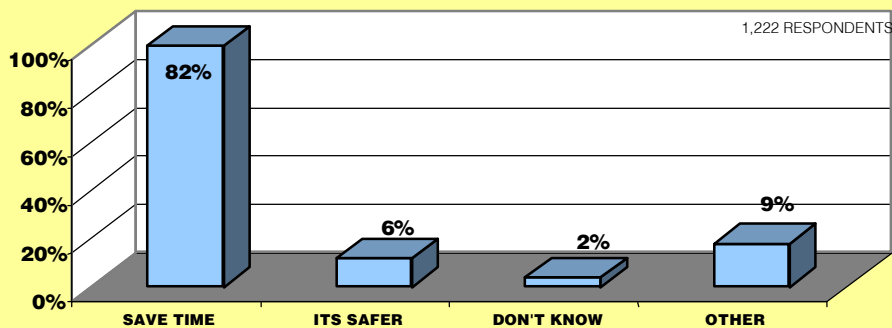
The HOV Performance Program examined the current air quality impacts of carpool lanes in Los Angeles County. Further testing and monitoring will be needed over a number of years to ascertain the true long-term benefits of carpool lanes with regard to air quality.

11) Just because traffic is backed up in other lanes doesn't mean the carpool lanes aren't working.

Carpool lanes are part of an overall strategy to address corridor and regional congestion problems on Los Angeles County freeways. With increases in population, employment and automobile ownership generating more traffic, carpool lanes provide options for those who are able to take the bus, carpool or vanpool.

Carpool lanes provide a travel alternative that many people find attractive. In recent surveys, 64% of respondents agreed or strongly agreed that carpool lanes reduce congestion in all freeway lanes, while 82% of the people using carpool lanes said that the main reason they did so was to save time.

WHAT IS THE MAIN REASON YOU USE THE CARPOOL LANES?



Eleven things you should know about the carpool lanes in Los Angeles County.

The following is a summary of key findings from the Los Angeles County Metropolitan Transportation Authority (MTA) HOV Performance Program. The study findings represent the culmination of an extensive effort to collect and analyze traffic and user data to evaluate the effectiveness of the carpool lane system in Los Angeles County. The HOV Performance Program was conducted in cooperation and coordination with other state, regional, and local agencies and organizations.

The HOV Performance Program measured the impact of carpool lane use against a set of program goals and objectives. Regional HOV goals were consolidated into five guiding objectives that were defined in a preliminary Evaluation Plan. The objectives included:

- 1. Manage travel demand by increasing person movement capacity in congested freeway corridors.
- 2. Encourage carpooling, vanpooling, and bus use by providing travel and mobility options.
- 3. Provide travel time savings and trip reliability to travelers using the HOV facilities.
- 4. Provide air quality benefits.
- 5. Promote a cost-effective transportation system.

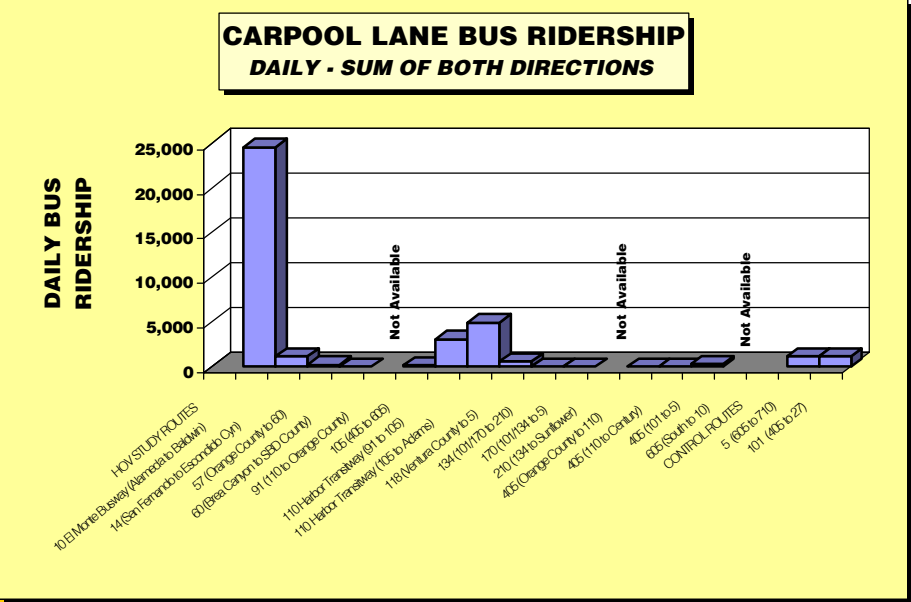
Various travel data including vehicle volumes, travel time, vehicle occupancy, transit utilization, and accident statistics were compiled and analyzed to evaluate the operational characteristics of HOV facilities in Los Angeles County. This performance data evaluation was supplemented by extensive market research to determine the level of support for the HOV system, to understand traveler needs and desires, and to expand ways to communicate the benefits of HOV facilities.

Detailed findings from the HOV Performance Program are presented in a series of Technical Memoranda and a final Evaluation Report. Electronic copies of these documents are available from the MTA website at www.mta.net.

The program findings help address some of the common questions and misconceptions regarding carpool lanes and the overall performance of the carpool lane system in Los Angeles County. Eleven "things you should know" about the Los Angeles County carpool lane system performance are presented in this executive summary. This important information is of benefit in planning future carpool lane investments and contemplating changes in operational policies.

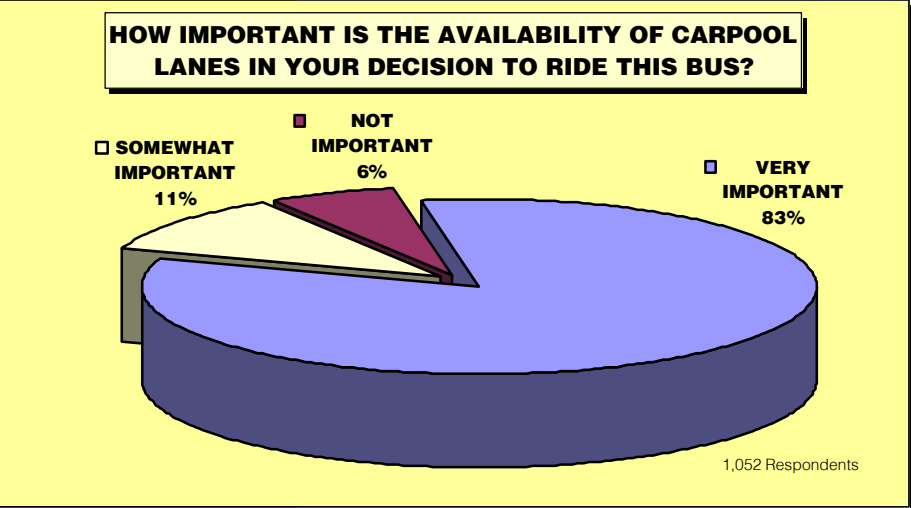


8) Carpool lanes are important to bus transit.



A few carpool lanes in Los Angeles County, particularly the El Monte Busway on the I-10 (San Bernardino) Freeway and the Harbor Transitway on the I-110 (Harbor) Freeway (pictured right), carry a significant number of transit passengers. The El Monte Busway carpool lanes carry over 24,500 transit passengers daily, and the Harbor Transitway carpool lanes carry almost 5,000 transit passengers daily.

Almost all the carpool lane transit riders surveyed say that the carpool lanes are important in their decision to use transit services. Over one-third of these surveyed transit riders (34%) say they would most likely discontinue riding the bus if the buses were no longer able to travel in the carpool lanes.



While the two carpool lane corridors that have the highest current transit ridership link directly to downtown Los Angeles, there are other carpool corridors in Los Angeles County that connect major residential and employment centers that could probably benefit from increased bus service. Comparisons to other cities with similar characteristics (like Houston and Seattle) show the potential exists to move more transit passengers in carpool lanes.



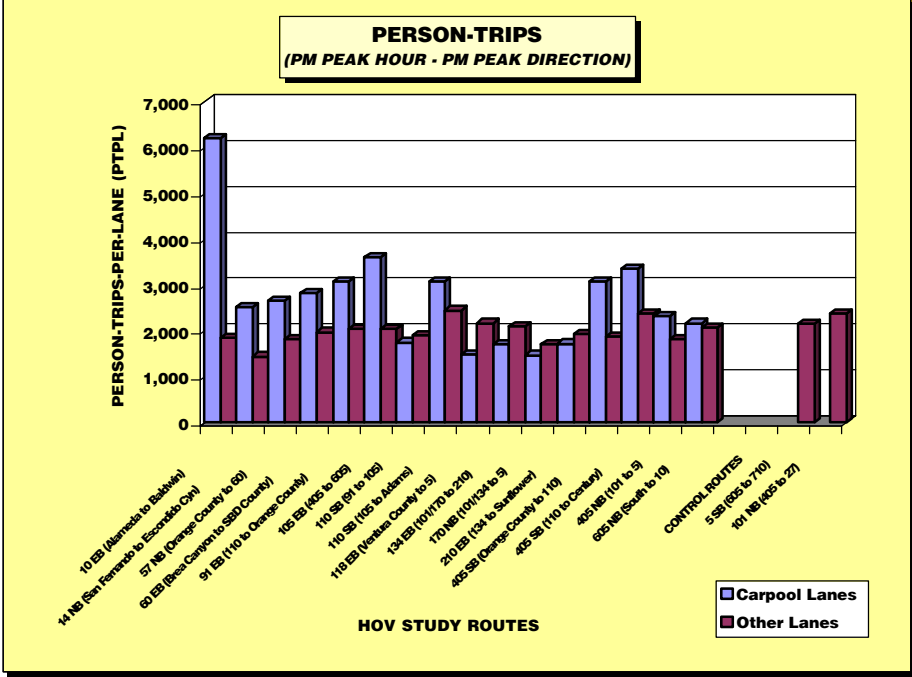
3) Carpool lanes don't have to look full to be effective.

A commonly voiced concern is that the carpool lanes sometimes "look empty" and therefore they must not be working. In Los Angeles County, approximately half of the residents feel that carpool lanes are sufficiently utilized, while slightly fewer than half feel they are underutilized.

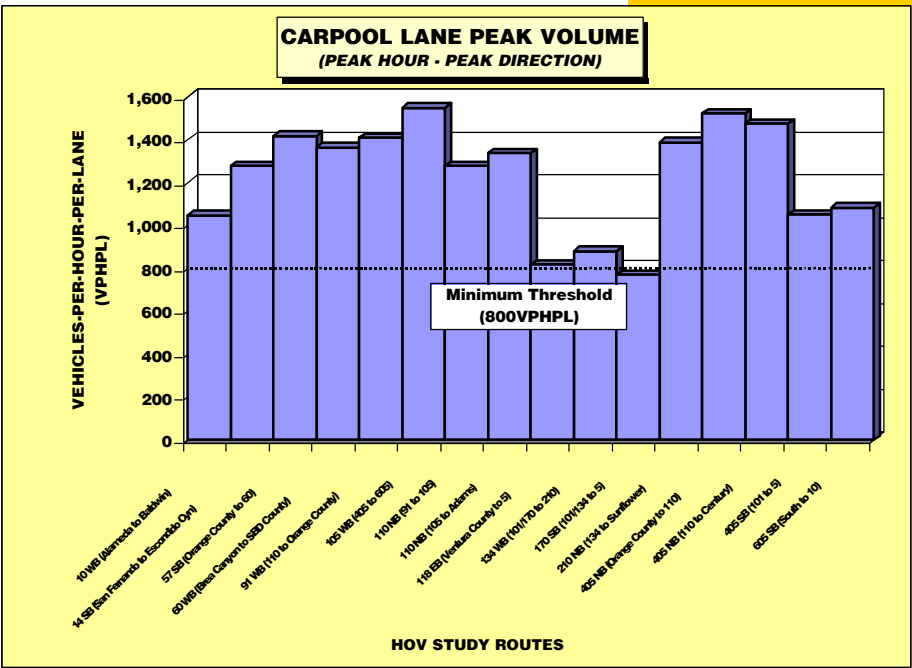
Despite inherent capacity constraints and fewer vehicles, a carpool lane on Los Angeles County's busiest freeways carries from 1 to 3 times more people than an adjacent freeway lane. To look at this from a different perspective, one bus can carry as many as 50 commuters, and about half the number of carpools can carry as many people as a full general-purpose freeway lane. This means that carpool lanes (and particularly those with transit services) can carry more people in fewer vehicles.

Caltrans [HOV Guidelines for Planning, Design and Operations](#) (July 1991) established a peak minimum lane threshold of 800 vehicles per hour for carpool lanes more than one year old. In Los Angeles County, **all but one of the existing freeway carpool routes exceed this threshold.** In most cases, carpool lanes in Los Angeles County exceed this threshold by more than 50% (or 1,200 vehicles per hour).

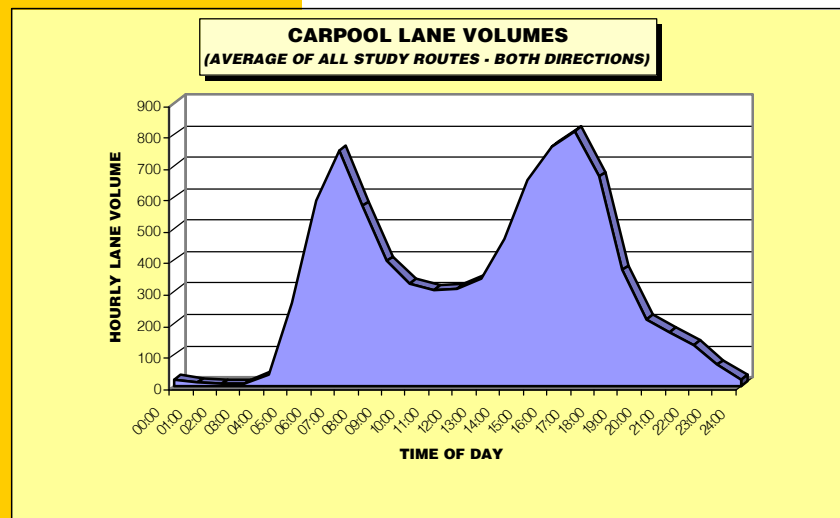
Perhaps the most serious challenge Los Angeles County carpool lanes face is that they are now so popular that they are getting too crowded. Right now, several carpool lanes in Los Angeles County are close to reaching a maximum desirable operating capacity. These findings suggest that carpool lanes are indeed very effective, and that future effort is required to ensure they continue to be effective.



Carpool lanes are mass transit lanes, and their usefulness and effectiveness are compromised when they operate even a little over capacity. Once the operating capacity of a carpool lane is exceeded, congestion begins to occur more frequently, increasing travel times and reducing time savings. Increasing carpool lane transit services is one option that can be used to increase the person moving capacity of carpool lanes to make them more effective.



4) Carpool lanes are used all day, everyday.



While use of carpool lanes is highest during the mornings and evenings, many people use carpool lanes throughout the day. In fact, almost 40% of Los Angeles County's daily carpool users are not traveling the lanes during the morning and evening peak commute periods. On many routes, "off-peak" use in the middle of the day represents 30 to 50 % of peak hour demand. The same is also true for weekend use.

These trends indicate that a very large number of carpool lane travelers rely on the lanes throughout the day, and without the availability of these lanes, they would not have a reliable option to avoid periodic congestion. These volume levels support the current 24-hour operation of carpool lanes in the County.

5) Carpool lanes encourage people to switch from driving alone.

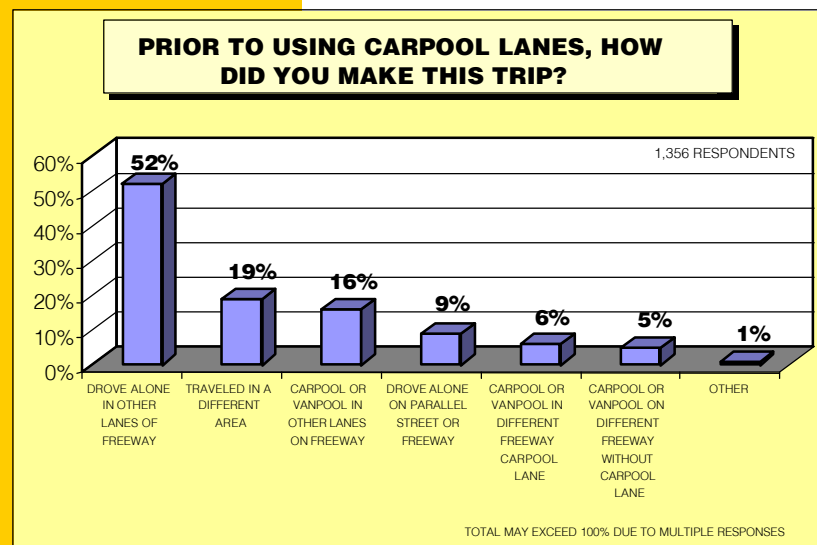
The purpose of carpool lanes is to provide an alternative to congestion so that freeway users have a travel option that can help them save time. By providing the incentive of time savings, carpool lanes encourage people to form carpools or ride transit, thus helping to reduce the overall number of vehicles on the road.

Surveys of Los Angeles County carpool lane users found that over 50% of current carpoolers previously drove alone in the other lanes on the same freeway. In addition, another 9% of carpool lane users said they previously drove alone on a

parallel street or other freeway prior to using the carpool lanes. These findings indicate that Los Angeles County commuters are willing to change their driving behavior to share their trip when carpool lanes are provided. And these findings are not surprising. A University of California Irvine survey completed more than 15 years ago found a similar percentage of drive alone commuters started to carpool when Orange County's first carpool lanes opened. Implementing carpool lanes has been an effective way of getting people to start carpooling.

The positive impact of carpool lanes on carpool formation has been evidenced in every corridor

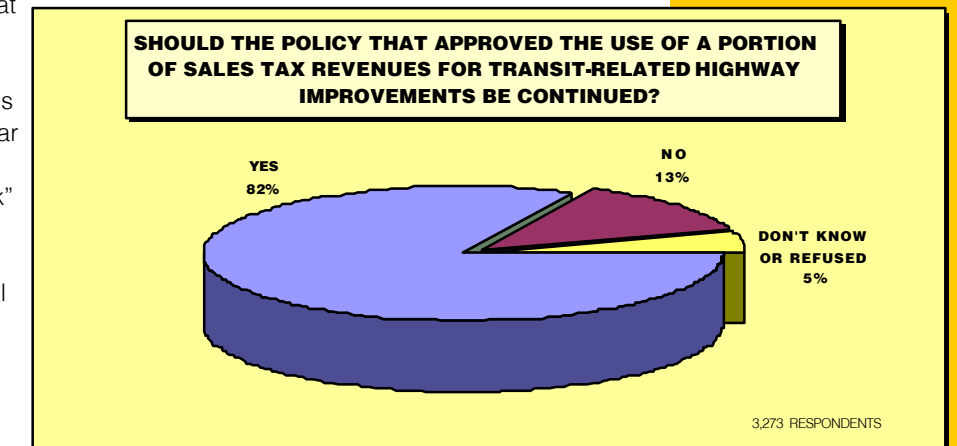
in Los Angeles County where carpool lanes have been provided. A comparison with other routes in Los Angeles County that do not have carpool lanes, like Interstate 5 and U.S. Route 101, shows that carpool routes have an overall higher average number of persons in each vehicle. In fact, average vehicle occupancies have been declining for a number of years on the non-carpool routes (which is consistent with national trends), but occupancies have increased on those routes with carpool lanes. Providing carpool lanes has made it possible to move more people around Los Angeles County in fewer vehicles.



6) Carpool lanes are a good public investment.

Considering only the benefit of time savings, almost half of the County's carpool lanes have already proven their economic benefit. When comparing benefits to costs, a ratio of at least 1 to 1 is considered a worthwhile investment. For Los Angeles County carpool lanes, the benefit to cost ratio is about 10 to 1 over the estimated 20-year life of the facilities, while the average amount of time for benefits to "payback" costs is about nine years. In nearly every instance, the user and non-user benefits of Los Angeles County carpool lanes exceed the taxpayer costs. Considering the cost effectiveness of carpool lanes, it is not surprising that 82% of Los Angeles County residents

support the use of a portion of their County sales tax revenues for more transit-related highway improvements like carpool lanes.



7) Many carpool lanes are full and have no capacity to sell.

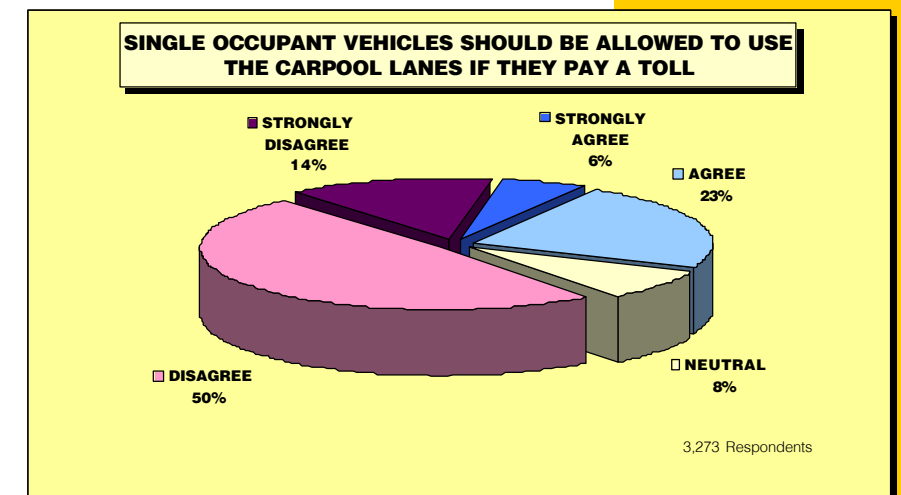
In some areas, excess capacity in the carpool lanes is "sold" to single occupant vehicle drivers who are willing to pay a toll. These facilities are often referred to as High-Occupancy Toll (HOT) lanes. The I-15 carpool lanes in San Diego County are an example of HOT lanes. At different times HOT lanes have also been considered as an option for some freeways in Los Angeles County.

In Los Angeles County, many (10 of 16) of the carpool lanes are carrying between 1,200 and 1,600 vehicles-per-hour during the peak commute periods, which are the same periods when people are most likely to be willing to pay a price to avoid congestion. National guidelines suggest that time savings benefits are lost above a maximum threshold of 1,200 to 1,500 vehicles per lane. When these levels are exceeded, speeds in the carpool lanes can slow down as congestion builds. Without any capacity to sell in these already busy carpool lanes, there is little opportunity to add more potential users that pay a toll or fee without endangering travel benefits.

On the routes where capacity does exist in the carpool lanes, there is also capacity available in the other lanes, so all lanes move at about the same speed. Under these conditions, the carpool lanes are not

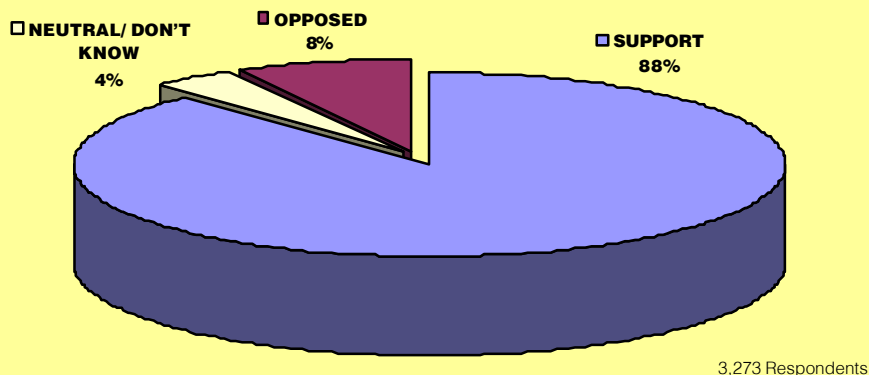
likely to offer any time savings benefit and, therefore, it is unlikely that single occupant vehicles would be willing to pay a toll or fee to use the carpool lanes.

In two separate surveys, a majority of the Los Angeles County respondents believe that carpool lanes should be reserved for carpool and transit use only. Almost two-thirds (64%) of Los Angeles County residents disagreed with the idea of opening up carpool lanes to single occupant vehicles that pay a toll. Similarly, over one-half (52%) of residents did not agree with the current policy that allows ultra low emission vehicles to use the carpool lanes when they carry the driver only.



1) Nearly everyone supports carpool lanes.

OVERALL, WOULD YOU SAY YOU SUPPORT OR OPPOSE HAVING CARPOOL LANES ON LOS ANGELES COUNTY FREEWAYS?



In Los Angeles County, there is very high public support for carpool lanes. An overwhelming majority (88%) of Los Angeles County residents support having carpool lanes on Los Angeles County freeways, including 70% of freeway motorists who do not choose to use the carpool lanes. This overwhelming support of carpool lanes is evidenced in every geographic part of the county, by users on every freeway route, and by all ethnic and income groups.

2) All carpool lanes save time, and the time savings can add up.

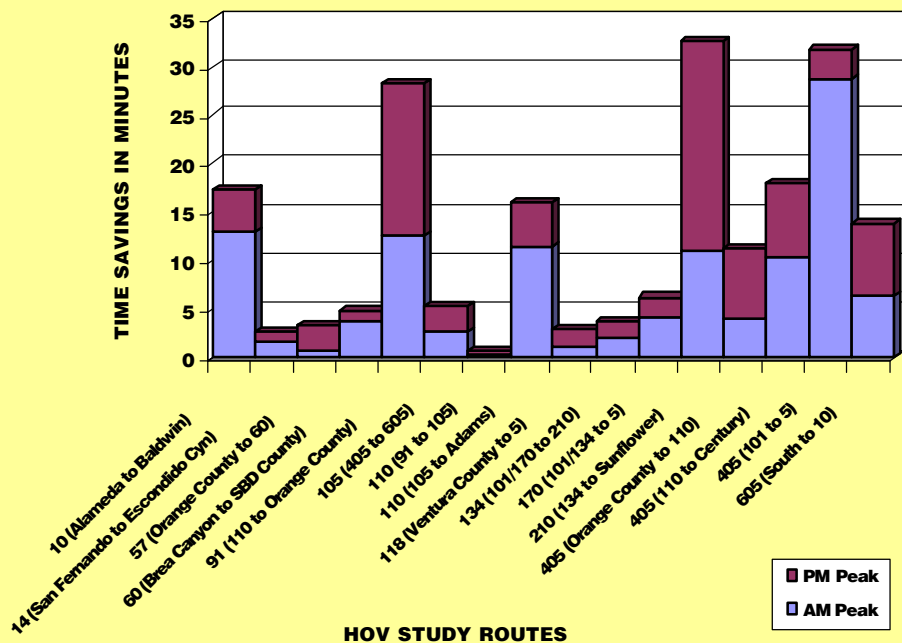
The HOV Performance Program findings show that **all** carpool routes in Los Angeles County provide time savings, although the travel time savings for each carpool route

varies. Combining the time savings for multiple carpool routes, carpool lane interchange ramps and carpool bypass ramps at freeway entrance ramp meters really adds up.

Carpool lanes that provide the greatest time savings are typically located along very congested freeway corridors. In cases where carpool lane time savings are less, it appears to be due to the following reasons:

- ◆ Too much demand causing congestion in the carpool lanes.
- ◆ Merging difficulties causing congestion at the end of the carpool lanes.
- ◆ A lack of congestion in the other lanes resulting in no incentive to use the carpool lanes.

AVERAGE TRAVEL TIME SAVINGS



The SR-14 (Antelope Valley) Freeway, for example, connects the primarily residential communities of the Antelope Valley and the major employment centers of the San Fernando Valley and greater Los Angeles. Not surprisingly, there are already over 1,100 daily transit riders using the carpool lanes in this corridor (in addition to those transit riders that use the parallel Metrolink commuter rail service). As the communities in the Antelope Valley grow, and traffic conditions on the SR-14 Freeway deteriorate, transit in this corridor will become an increasingly attractive commute choice.

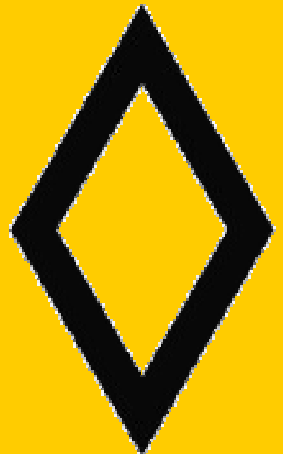


9) There are not a lot of cheaters in the carpool lanes.

Carpool lane requirements appear to be respected by most Los Angeles County freeway users. Violation rates for vehicles with fewer than the minimum required number of persons represent an average of no more than 3% of all carpool lane users.

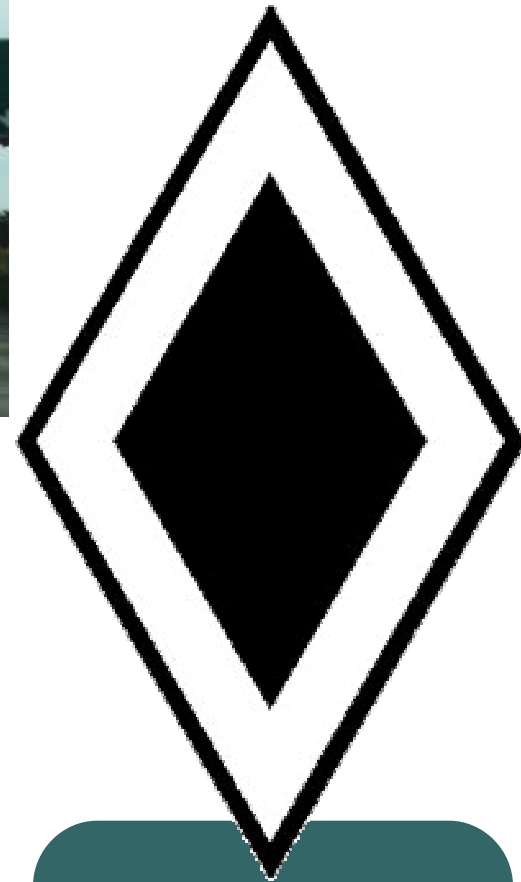
Thanks to efforts of the California Highway Patrol, a hefty \$271 minimum fine for a first time offense, and a vast majority of motorists who respect the reason for having carpool lanes, this violation rate is one of the lowest in the nation.

HOV Routes	% Violators	
	NB or EB	SB or WB
SR-14	0%	0%
SR-57	1%	0%
SR-60	0%	0%
SR-91	1%	0%
I-105	1%	1%
I-110	1%	1%
SR-118	0%	1%
SR-134	3%	1%
SR-170	1%	0%
I-210	2%	1%
I-405	0%	2%
I-605	2%	1%





Eleven things you should know about the carpool lanes in Los Angeles County.



HOV Performance Program Executive Summary



Los Angeles County Metropolitan Transportation Authority

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HS Public Affairs

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HOV Performance Program

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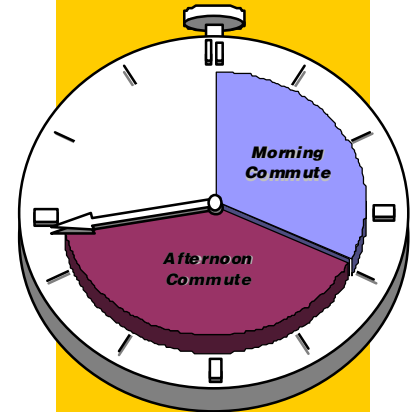
When these same carpool lane users were asked how much time they thought they saved by using the carpool lanes, they reported that they saved, on average, more than 19 minutes in the morning and 24 minutes in the afternoon. That adds up to nearly 45 minutes per day each person believed they saved.

Because "saving time" is the main reason people use carpool lanes, it is important that carpool lanes continue to provide time savings. On some routes where carpool lanes are becoming congested, it will be necessary to explore ways to continue to protect this benefit.

Expanding transit services and increasing minimum occupancy requirements are two possible approaches to enhance the people moving capacity of the carpool lanes without

increasing the number of vehicles. These approaches ultimately allow more people to share in the time savings benefit carpool lanes provide, without increasing congestion in the carpool lanes.

Other measures to make carpool lanes work better include encouraging commuting outside the peak hours, the provision of new carpool lanes in other corridors, and building additional carpool lanes in existing corridors. Adding carpool lane interchanges and eliminating the gaps in the carpool lane system reduce the need for vehicles to move in and out of the carpool lanes unnecessarily. By keeping vehicles in the carpool lanes, traffic in the other lanes benefit by reducing the amount of weaving and merging at congested freeway interchanges.



Do you want to know more about the carpool lanes in Los Angeles County?

Findings from the HOV Performance Program have helped provide a better understanding of what carpool lanes can do, and have done, for Los Angeles County. The Metropolitan Transportation Authority and Caltrans are committed to continue to monitor the performance of Los Angeles County's carpool lane investments.

For more information about the HOV Performance Program findings contact the Los Angeles County Metropolitan Transportation Authority, One Gateway Plaza, Los Angeles, California, 90012, or visit the MTA website at www.mta.net.

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